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REPUBLIC OF SOUTH AFRICA

EPARTEMENT VAN HANDEL  
N NYWERHEID



PCT / IB 02 / 0.0541

29.04.02 Certificate

PATENT OFFICE

REPUBLIEK VAN SUID-AFRIKA

DEPARTMENT OF TRADE AND  
INDUSTRY

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This is to certify that

RECD' 08 MAY 2002

WIPO

PCT

the documents annexed hereto are true copies of:

Application forms P.1 and P.3, provisional specification and drawings  
of South African Patent Application No. 2001/1579 as originally filed  
in the Republic of South Africa on 26 February 2001 in the name of  
NIEUWOUDT, GERT JOHANNES VAN TAAK for an invention entitled:  
" CULTIVATION OF PLANTS".

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Getekken te  
Signed at

PRETORIA

In die Republiek van Suid-Afrika, hierdie  
in the Republic of South Africa, this

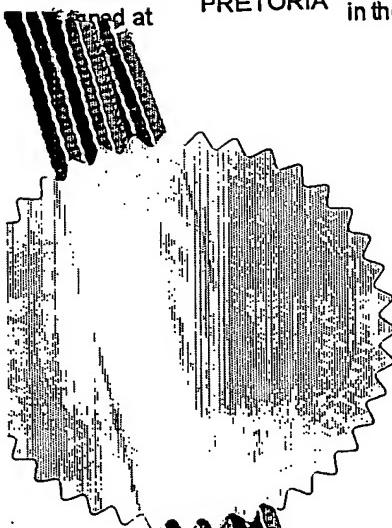
5th

dag van  
day of March 2002

Registrateur van Patente



**PRIORITY  
DOCUMENT**  
SUBMITTED OR TRANSMITTED IN  
COMPLIANCE WITH RULE 17.1(a) OR (b)



REPU... SOUTH AFRICA  
PATE... ACT, 1978  
APP... TION FOR A PATENT AND  
ACK... OLEDEMENT OF RECEIPT  
(See: 30(1) Regulation 22)

PUBLIC OF SOUTH AFRICA  
FORM P.1 REVENUE  
(to be lodged in duplicate)

26.2.01 R 060.00

THE GRANT OF A PATENT IS HEREBY REQUESTED BY THE UNDERMENTIONED APPLICANT  
ON THE BASIS OF THE PRESENT APPLICATION FILED IN DUPLICATE

PUBLIEK VAN SUID AFRIKA  
A&A REF: 14495370 DW

01 PATENT APPLICATION NO 20011579

71 FULL NAME(S) OF APPLICANT(S)

NIEUWOUDT, Gert Johannes Van Taak

ADDRESS(ES) OF APPLICANT(S)

The farm Kleinhoek in the district Clanwilliam, 8135, Republic of South Africa.

54 TITLE OF INVENTION

CULTIVATION OF PLANTS

Only the items marked with an "X" in the blocks below are applicable.

- THE APPLICANT CLAIMS PRIORITY AS SET OUT ON THE ACCOMPANYING FORM P.2. The earliest priority claimed is  
Country: No: Date:  
 THE APPLICATION IS FOR A PATENT OF ADDITION TO PATENT APPLICATION NO 21 01  
 THIS APPLICATION IS A FRESH APPLICATION IN TERMS OF SECTION 37 AND BASED ON  
APPLICATION NO 21 01

THIS APPLICATION IS ACCCOMPANIED BY:

- A single copy of a provisional specification of 10 pages  
 Drawings of 2 sheets  
 Publication particulars and abstract (Form P.8 in duplicate) (for complete only)  
 A copy of Figure of the drawings (if any) for the abstract (for complete only)  
 An assignment of invention  
 Certified priority document(s). (State quantity)  
 Translation of the priority document(s)  
 An assignment of priority rights  
 A copy of Form P.2 and the specification of RSA Patent Application No 21 01  
 Form P.2 in duplicate  
 A declaration and power of attorney on Form P.3  
 Request for ante-dating on Form P.4  
 Request for classification on Form P.9  
 Request for delay of acceptance on Form P.4  
 Extra copy of informal drawings (for complete only)

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74 ADDRESS FOR SERVICE: Adams & Adams, Pretoria

Dated this 26 day of February 2001

ADAMS & ADAMS  
APPLICANTS PATENT ATTORNEYS

The duplicate will be returned to the applicant's address for service as proof of lodging but is not valid unless endorsed with official stamp

THE COLLEGE OF TRADES  
COMMISSIONER OF PATENTS  
OFFICIAL DATE STAMP

2001 -02- 26

PATENTS OFFICE  
REPUBLIC OF SOUTH AFRICA

REGISTRAR OF PATENTS

AD: ADAMS  
PRI: A

REPUBLIC OF SOUTH AFRICA  
PATENTS ACT, 1978  
DECLARATION AND POWER OF ATTORNEY  
(Section 30 - Regulation 8, 22(i)(c) and 33)

FORM P.3

ENT APPLICATION NO	
01	20011579

A&A Ref: V14495

LODGING DATE	
22	26 February 2001

FULL NAME(S) OF APPLICANT(S)	
71	NIEUWOUDT, Gert Johannes Van Taak

FULL NAME(S) OF INVENTOR(S)	
72	NIEUWOUDT, Gert Johannes Van Taak

EARLIEST PRIORITY CLAIMED	COUNTRY	NUMBER	DATE
	33 -	31 -	32 -

NOTE: The country must be indicated by its International Abbreviation - see schedule 4 of the Regulations

TITLE OF INVENTION	
54	CULTIVATION OF PLANTS

\* I/We NIEUWOUDT, Gert Johannes Van Taak

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hereby declare that :-

1. I/we am/are the applicant(s) mentioned above;
- \*\* 2. I/we have been authorized by the applicant(s) to make this declaration and have knowledge of the facts herein stated in the capacity of \_\_\_\_\_ of the applicant(s);
- \*\*\* 3. the inventor(s) of the abovementioned invention is/are the person(s) named above and the applicant(s) has/have acquired the right to apply by virtue of an assignment from the inventor(s);
4. to the best of my/our knowledge and belief, if a patent is granted on the application, there will be no lawful ground for the revocation of the patent;
- \*\*\*\*\* 5. this is a convention application and the earliest application from which priority is claimed as set out above is the first application in a convention country in respect of the invention claimed in any of the claims; and
6. the partners and qualified staff of the firm of ADAMS & ADAMS, patent attorneys, are authorised, jointly and severally, with powers of substitution and revocation, to represent the applicant(s) in this application and to be the address for service of the applicant(s) while the application is pending and after a patent has been granted on the application.

SIGNED THIS 23 ~ DAY OF *January*

*G. J. T. Nieuwoudt*

NIEUWOUDT, Gert Johannes Van Taak

REGISTRAR OF THE COURT OF THE COMMISSIONER OF PATENTS
2001
2001-02-26
PATENTS OFFICE REPUBLIC OF SOUTH AFRICA

(no legalization necessary)

- \* In the case of application in the name of a company, partnership or firm, give full names of signatory/signatories, delete paragraph 1, and enter capacity of each signatory in paragraph 2.  
\*\* If the applicant is a natural person, delete paragraph 2.  
\*\*\* If the right to apply is not by virtue of an assignment from the inventor(s), delete "an assignment from the inventor(s)" and give details of acquisition of right.  
\*\*\*\* For non-convention applications, delete paragraph 5.

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PATENT ATTORNEYS  
PRETORIA

FORM P6

REPUBLIC OF SOUTH AFRICA  
Patents Act, 1978

**PROVISIONAL SPECIFICATION**  
(Section 30 (1) - Regulation 27)

21 01 OFFICIAL APPLICATION NO

22 LODGING DATE

20011579

26 February 2001

71 FULL NAME(S) OF APPLICANT(S)

NIEUWOUDT, Gert Johannes Van Taak

BEST AVAILABLE COPY

72 FULL NAME(S) OF INVENTOR(S)

NIEUWOUDT, Gert Johannes Van Taak

54 TITLE OF INVENTION

CULTIVATION OF PLANTS

THIS INVENTION relates to cultivation of plants. In particular, it relates to a ground cover for cultivation of plants and to a method of providing anchoring formations for plants.

According to one aspect of the invention, there is provided a ground cover for cultivation of plants, the ground cover including

5 a membrane strip having a side which in use is an upper side;

and

10 anchoring formations on the upper side of the membrane strip for assisting a plant in the vicinity of the ground cover to anchor itself to the ground cover.

The membrane strip may be water impervious and it may be light impervious, at least to some degree, as required. Typically, the membrane strip is of polyethylene material. The membrane strip may be of conventional

agricultural sheeting, e.g. any of the membranes or sheets supplied by Polyon Agricultural Sheeting of Kibbutz Barkai, M.P. Menashe 37860 Israel.

The membrane strip may have a thickness of between about 15  $\mu\text{m}$

and about 40  $\mu\text{m}$ , typically between about 15  $\mu\text{m}$  and about 37  $\mu\text{m}$ , e.g. about  
5 20  $\mu\text{m}$ .

The membrane strip may have a length of at least 500m, typically

at least 1000 m, e.g. about 1000 m.

The membrane strip may have a width of between about 0.5 m and

about 2.5 m, typically between about 1 m and about 1.5 m, e.g. about 1,2 m.

10 The anchoring formations may be defined by a net. The net may be

attached, e.g. adhesively attached to the membrane strip at a plurality of spaced locations, allowing the net to be displaceable away from the membrane strip, in areas where the net is not attached to the membrane strip. Typically, the net is

15 attached to the membrane strip along two longitudinally extending zones. Each zone may have a width of between about 2 cm and about 25 cm, typically between about 5 cm and about 15 cm, e.g. about 10 cm. Typically, the longitudinally extending zones are adjacent respective longitudinally extending edges of the membrane strip, leaving a central, longitudinally extending zone of the net displaceable away from the membrane strip.

Apertures defined by the net may be rectangular. Major sides of each rectangular aperture may extend longitudinally relative to the membrane strip.

Each aperture defined by the net may have a length of between about 2.5 cm and about 5 cm, typically between about 3.5 cm and about 4 cm, e.g. about 3.5 cm.

Each aperture defined by the net may have a width of between about 1.5 cm and about 3 cm, typically between about 1.7 cm and about 2.5 cm, e.g. about 2.5 cm.

The net may be of a synthetic plastics or polymeric material, e.g. polyethylene or polypropylene. Preferably, the net is of a material which is UV-stabilized.

The net may be of strands having a thickness of between about 0.2 mm and about 1.5 mm, typically between about 0.3 mm and about 0.5 mm, e.g. about 0.45 mm.

The membrane strip may define at least one aperture therethrough for receiving a plant. Thus, in use, a plant typically grows through the aperture in the membrane strip and anchors itself to the ground cover.

The membrane strip may define a plurality of longitudinally spaced apertures. The apertures may be equidistantly spaced and may be located on a longitudinally extending centre line of the membrane strip. Although the ground cover may be supplied in the trade with the apertures, it is to be appreciated that 5 it may be more convenient for a user of the ground cover simply to punch or tear holes in the membrane strip in the number and locations required by the user.

The ground cover may be in the form of a roll, comprising a ply consisting of the membrane strip and another ply consisting of the anchoring formations.

10 According to another aspect of the invention, there is provided a method for providing anchoring formations for plants, the method including laying a ground cover as hereinbefore described on a strip of ground; and securing the ground cover to the ground.

15 Laying the ground cover may include unrolling the membrane strip and the anchoring formations from a roll, comprising a ply of the membrane strip and a ply of the anchoring formations.

Securing the ground cover to the ground may include securing longitudinally extending zones adjacent respective longitudinally extending edges

of the ground cover to the ground. This may be effected by temporarily holding down a portion of an edge on the ground and piling soil onto the held-down portion of the edge.

According to a further aspect of the invention, there is provided a  
5 method of providing anchoring formations for plants, the method including  
laying a membrane strip having a side which in use is an upper  
side on a strip of ground;  
laying anchoring formations on the upper side of the  
membrane strip; and  
10 securing the membrane strip and the anchoring formations to  
the ground.

The membrane strip and the anchoring formations may be laid on the  
ground simultaneously, and may be as hereinbefore described.

15 The method may include providing a roll, comprising a ply of the  
membrane strip and a ply of anchoring formations, and unrolling the membrane  
strip and the anchoring formations simultaneously to lay them simultaneously on  
the ground.

Securing the membrane strip and the anchoring formations to the  
ground may include securing longitudinally extending zones adjacent respective

longitudinally extending edges of the membrane strip and the anchoring formations to the ground. This may be effected by temporarily holding down a portion of an edge of both of the membrane strip and the anchoring formations and piling soil onto the held-down portions of the edges.

5           The invention will now be described, by way of example, with reference to the accompanying diagrammatic drawings, in which

Figure 1 shows a three-dimensional view of a portion of a ground cover in accordance with the invention; and

10           Figure 2 shows a three-dimensional view of the portion of the ground cover of Figure 1, in use.

15           Referring to the drawings, reference numeral 10 generally indicates a ground cover in accordance with the invention, only a portion of which is shown. The ground cover 10 includes a membrane strip 12 with a side 14 which in use is an upper side, and a net 16, the strands 18 of which define anchoring formations.

The net 16 is located on and covers the upper side 14 of the membrane strip 12. Two longitudinally extending, ten cm wide edge portions of the net 16 are adhesively attached to similar edge portions 17 of the membrane strip 12. Thus, a longitudinally extending central area or zone of the net 16 is not directly attached to the membrane strip 12, but only by means of the edge

portions. The central area or zone is thus free to move away, at least to a limited extent, from the membrane strip 12, allowing plant tentacles to grow inbetween the net 16 and the membrane strip 12.

The membrane strip 12 is water impervious and light impervious and.

5 is of black polyethylene material. It has a thickness of about 20 µm, a width of about 1,2 m and a length of about 1000 m.

Rectangular apertures or rectangular blocks 19 defined by the net 16

each has a length of about 3,5 cm and a width of about 2,5 cm. The net 16 is arranged relative to the membrane strip 12 such that the apertures or blocks 19 defined by the net 16 have their shorter sides transverse to the membrane strip 10  
12.

The net 16 is of polyethylene or polypropylene material. A typical example of a suitable net 16 is a net supplied under the trade name Netlon Palnet, available from African Commerce Developing Company (Proprietary) Limited of 15 Dacres Avenue, Epping 2, Eppingdust, Cape Town, Republic of South Africa.

The ground cover 10 is supplied in the form of a two-ply roll (not shown), one ply consisting of the membrane strip 12 and the other ply consisting of the net 16.

In use, the ground cover 10 is laid on the ground by unrolling the membrane strip 12 and the net 16 from the two-ply roll. Typically, the ground cover 10 is laid over a linearly extending ridge or hump, with a centre line of the ground cover 10 being located on a longitudinally extending centre line of the ridge or hump. Typically, an irrigation pipe or the like (not shown) is located underneath the membrane strip 12 but, as will be appreciated, the exact arrangement may depend on the kind of plants for which the ground cover 10 is intended to be used.

The ground cover 10 may be laid using a conventional machine for the laying of conventional ground covers for the cultivation of plants. Thus, the unrolling membrane strip 12 and net 16 may be temporarily held down by a pair of spaced wheels pressing down on the edge portions 17, whilst ploughshares may throw two rows 20 of soil onto the edge portions 17.

A plurality of apertures (only one of which is shown) is formed in the membrane strip 12, by simply pushing holes through the membrane strip 12. The apertures are typically located on the centre line of the membrane strip 12 and are spaced a desired distance from each other. Plants to be cultivated are then planted, one in each aperture. Typically, the ground cover 10 is used for plants with tentacles, such as watermelon. The plants growing through the apertures find it easy to attach or anchor themselves to the net 16, as shown in Figure 2 of the drawings.

The use of a ground cover, comprising only a membrane strip, is

known to the applicant. Membrane strip ground covers have a number of

advantages, including that fruit ripens earlier and more evenly, fruit can be

harvested over a longer period, and less chemical pest control is required. By also

5 supplying anchoring formations on the upper side of the membrane strip, thereby.

assisting cultivated plants to anchor themselves to the ground cover 10, the

ground cover 10, as illustrated, also provides the following advantages: due to

the anchoring of tentacles of the plant, wind damage to the plant is reduced;

plants are less acceptable to fungi, infections and stress when they are less

disturbed; immature fruits are not moved about, which reduces abrasions and

loss of fruit; natural wind breaks are sufficient to prevent wind damage to the

plants and fruit and it is thus not necessary to erect artificial windbreaks, lowering

input capital; the net 16 strengthens the membrane strip 12, inhibiting wind

damage to the membrane strip 12 and thus allowing thinner membrane strips to

15 be used and use of the ground cover 10 for a second harvest during the same

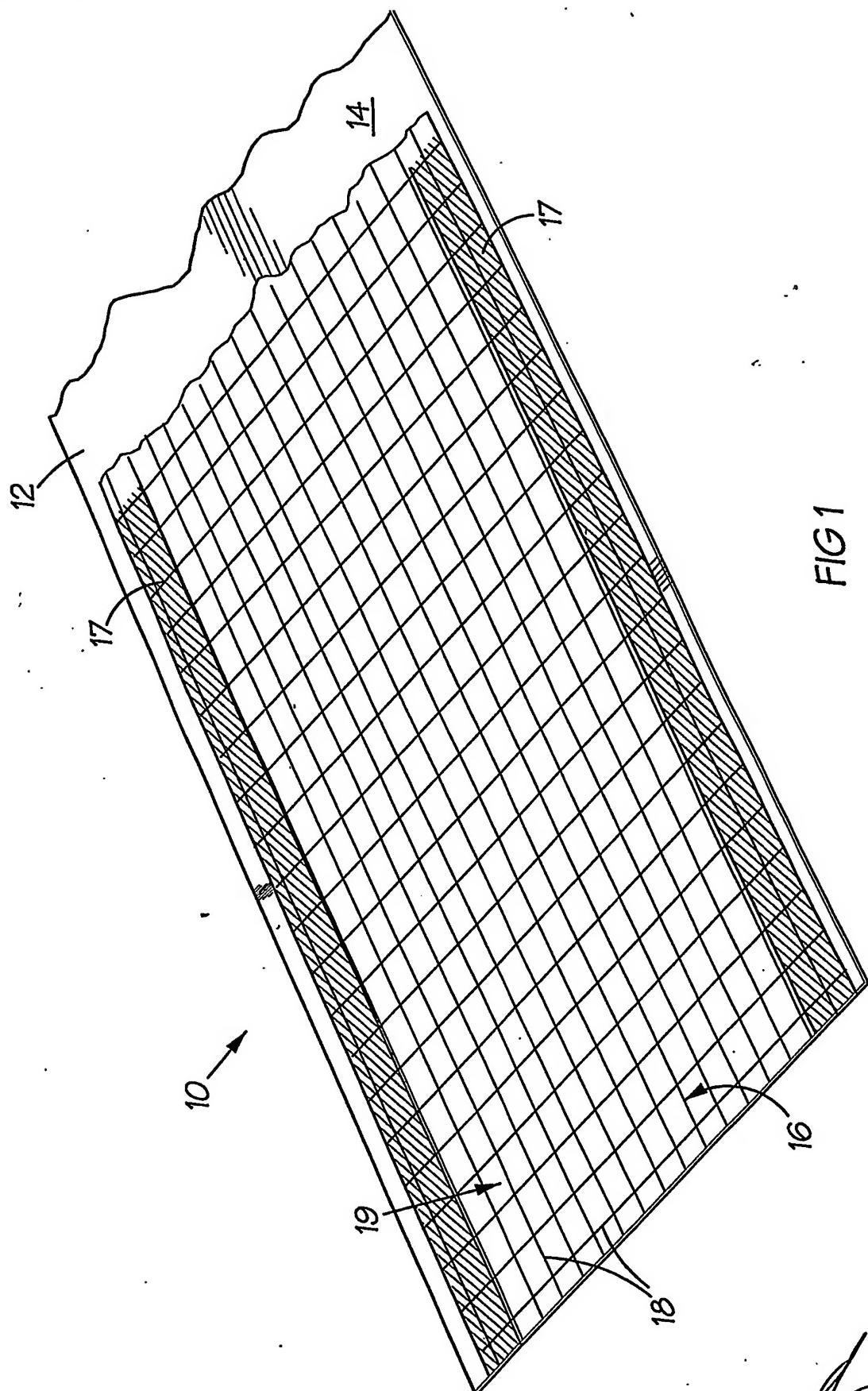
season; and more mature fruit is produced per hectare, leading to higher nett

income per hectare.

DATED THIS 26th DAY OF FEBRUARY 2001



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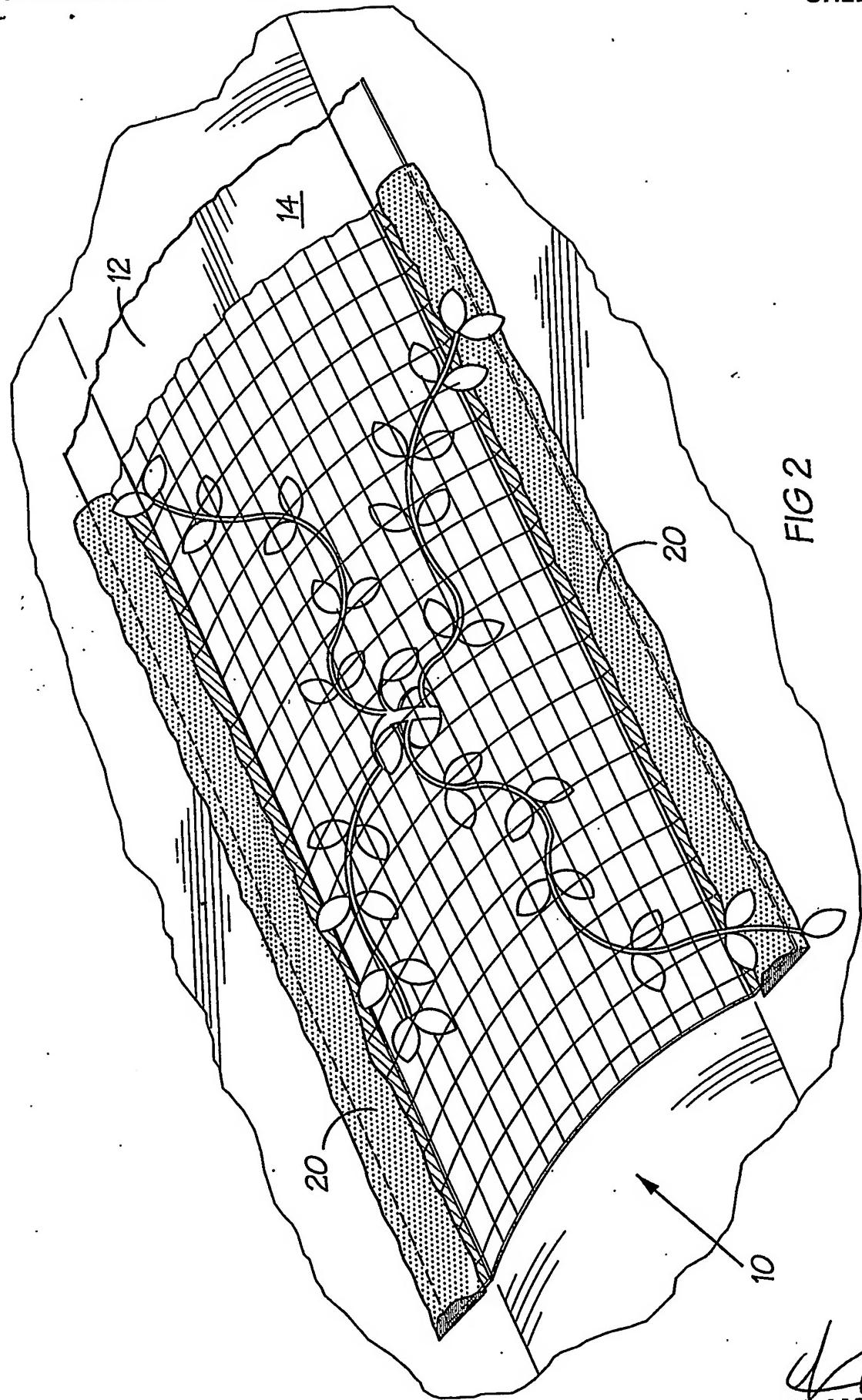


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2 SHEETS  
SHEET 2 OF 2



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